Lake Erie
Fisheries Assessment Unit
Report 1986-5

Summer Creel Census of the Wheatley, Leamington and Kingsville Docks, 1985

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TABLE OF CONTENTS

	Page
LIST OF TABLES	iii
LIST OF FIGURES	v
LIST OF APPENDICES	vi
ABSTRACT	vii
INTRODUCTION	1
DESCRIPTION OF THE STUDY AREA	2
METHODS	
Crew and Equipment	4
Schedule	4
Census Procedure	5
Data Analysis	6
RESULTS AND DISCUSSION	
Distribution of Angling Effort	8
Catch and Harvest	8
Yellow Perch fishery	9
Effort	9
Catch Per Unit of Effort	9
Catch and Harvest	9
Age Composition	10
Residency Status	10
ACKNOWLEDGEMENTS	12
REFERENCES	13
TABLES	14
APPENDICES	27

LIST OF TABLES

Table		Page
1	Creel census schedule for the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	14
2.	Distribution of angling effort by month for the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	15
3.	Distribution of angling effort by day-type, census-period and month for Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	16
4.	Distribution of mean angling effort by day-type, census-period and month for Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	17
5.	Catch and harvest estimates (in number) of the sport fishery from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	18
6.	Percentage of anglers seeking particular species from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	19
7.	Effort by species anglers expressed as a percentage of total angling effort (rod-hours) from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	20
8.	Catch per unit of effort (CUE) for yellow perch caught by month from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	21
9.	Distribution of the yellow perch catch and harvest by month among the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	22
10.	Distribution of catch and effort statistics for yellow perch anglers by day-type among the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	23
11.	Distribution of catch and effort statistics for yellow perch anglers by census-period among the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	24
12.	Length and weight-at-age of yellow perch harvested by angling from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	25

Table		Page
13.	Residency status of anglers interviewed on the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.	26

LIST OF FIGURES

Figure		Page
1.	The study area.	3
2.	Age frequency histograms for angler harvested yellow perch from the Wheatley, Leamington and Kingsville docks, Lake Erie, 1985.	11

LIST OF APPENDICES

Appendix		Page
I	Field forms: 1. Angler interview form. 2. Boat count form. 3. Weather and water report form.	 27 28 28
II	Computational methods.	29
III	Common and scientific names of fish species reported during the Wheatley, Leamington and Kingsville docks creel census, Lake Erie, 1985.	32
IV	Monthly summaries of effort, catch per unit of effort (CUE), catch and harvest.	33

ABSTRACT

Between July 1 and August 31, 1985, a creel census was conducted on the Wheatley, Leamington and Kingsville docks in which 243 angling parties involving 566 anglers were interviewed. Fifty-five percent of the total estimated effort from the three docks (14,800 rod-hours) was expended from the Leamington dock. Wheatley and Kingsville docks received 24% and 21% respectively of the total effort expended. The mean angling effort per dock was 35 rod-hours during a weekday six and one-half hour fishing period and 50 rod-hours during a weekend day six and one-half hour fishing period.

An estimated 12,542 fish were caught in the study area in July and August and 6,212 were harvested. Yellow perch were sought by 81% of the angling parties interviewed and yellow perch anglers expended 81% of the total estimated effort from the three docks. Yellow perch made up 43% by number of the total catch and 73% of the total harvest. Fifty-two percent of the yellow perch catch and 59% of the yellow perch harvest by number came from the Wheatley dock. Contribution by angling to the yellow perch catch and harvest from the Leamington dock was 36% and 29% respectively, and from the Kingsville dock, 13% and 12% respectively.

Eighty-six percent of the anglers interviewed on the three docks in July and August were residents of Ontario.

INTRODUCTION

A roving, incomplete-trip creel census was conducted among anglers fishing from the Wheatley, Leamington and Kingsville docks in Lake Erie during July and August, 1985. This creel census is designed to provide information on the summer sport fishery. The objectives of this 1985 creel survey were:

to quantify the angling catch and harvest;

to estimate the angling effort and success;

to monitor the length and age characteristics of the harvest; and

to determine the resident to non-resident angler ratio.

DESCRIPTION OF THE STUDY AREA

The study area was confined to Lake Erie waters that were able to be fished by anglers standing on the docks at Wheatley, Leamington and Kingsville. These waters have been designated as Sector XVI and are separated into three areas (Figure 1).

Area 1 constitutes those waters that are accessible to anglers fishing from the Wheatley dock at 42°03'13"N and 82°28'06"W.

Area 2 constitutes those waters that are accessible to anglers fishing from the Leamington dock at 42°01'33"N and 82°36'11"W.

Area 3 constitutes those waters that are accessible to anglers fishing from the Kingsville dock at 42°01'40"N and 82°44'05"W.

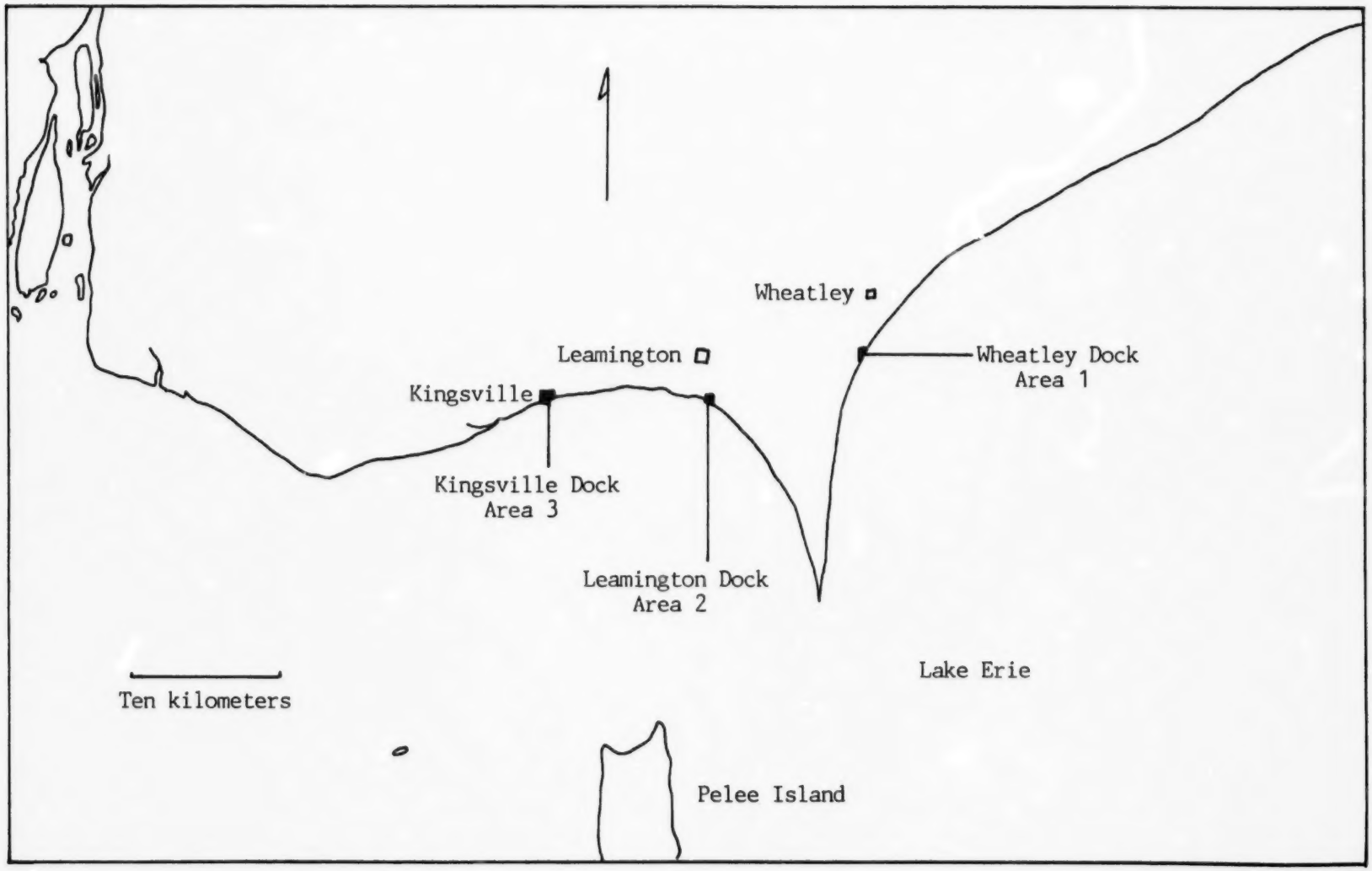

Figure 1. The study area.

METHODS

The creel census was done by a census clerk who travelled among the docks by truck.

Sampling equipment included a metric measuring board, thermometer, forceps, knife, maps, field forms (Appendix I), scale envelopes, fish identification guide and Ontario Fishing Regulation pamphlets.

Schedule

The 1985 dock survey schedule is outlined in Table 1. The survey was scheduled between July 1 and August 31. Canadian statutory holidays, i.e., Monday, July 1 and Monday August 5, were classified as weekend days.

Two weekend days and three weekdays were scheduled for sampling in each 14-day period, with the exception of the July 29-August 11 period, when two weekdays were scheduled because of logistical conflicts. All docks were surveyed on each sampling day and the sampling order among docks was chosen randomly. The criteria considered to establish strata within each month (July and August) were area (dock), day-type and census-period and sampling patterns were applied systematically to weekdays independently from weekend days. The following pattern was applied to designate the census-period to be sampled on weekdays:

July 4	Thursday	AM
July 5	Friday	PM
July 12	Friday	AM
July 15	Monday	PM

This pattern of alternating AM and PM census-periods on

consecutive sampling days for weekdays was continued for the remainder of the survey period.

Every other weekend was scheduled to be sampled starting with July 13-14. The following pattern was applied to designate the census-period to be sampled on weekend days:

July 13	Saturday	PM
July 14	Sunday	AM
July 27	Saturday	AM
July 28	Sunday	PM

This pattern was continued for the remainder of the survey period.

Census Procedures

Angler counts were made to determine the mean number of anglers within specific strata and angler counts and interview information were used to estimate angling effort and harvest in the various strata. The census clerk was expected to make three counts of all individual anglers (persons with fishing lines in the water) for each dock. The six and one-half hour sampling period allowed for two hours to be spent at each dock and some travel time between docks. At each dock, an angler count was to be done at the beginning of each two-hour survey period, after one hour had elapsed and before leaving the dock. Angling parties were approached and interviewed after the angler counts were completed.

The number of angling party interviews was not predetermined but remained a matter of practicality. As many angling parties as possible were to be interviewed to a maximum of 15 interviews per dock per sampling period. If a

large number of angling parties were present, a sample of parties was chosen for interviewing, for example, every other angling party was approached to keep the selection as unbiased as possible.

Representative scale samples and length and weight measurements were non-selectively taken from harvested fish. In 1985, 25 fish samples were to be taken from each dock for each of walleye, yellow perch, smallmouth bass, white bass, white perch and sheepshead. The decision to sample an angler's fish was made before approaching the angler and all fish were sampled from the cooperating angler to avoid bias.

The census-periods were six and one-half hours long and included angling between 0730 - 1400 h as the morning (AM) period and 1400 - 2030 h as the afternoon (PM) period.

Data Analysis

Census data were analysed using a computer program developed by the Lake Erie Fisheries Assessment Unit (Petzold 1980). Estimates of effort, catch and harvest were derived from observed values of same (based on six and one-half hour morning and afternoon fishing periods). Daily estimates were summarized and presented as stratum estimates (Appendix II).

The analysis included scheduled sampling days in which reduced effort was exerted because of bad weather. A second or third angler count during a census-period allowed an estimate to be made of variation in effort especially when adverse weather interfered with a scheduled census.

Effort was reported in rod-hours and in angler-hours; however, the measure of rod-hours was used to derive catch and harvest estimates as it reflects the time actively spent

fishing and the number of rods used. Sztramko and Paine (1984) explain that "during the 1974-80 period, angler-hours, which may have been more appropriately termed "user-hours", was used as a measure of participation in a fishery. Angler-hours was derived from the time which a fishing party actively fished and the number of persons in the fishing party, regardless of whether all individuals in the party fished."

Catch per unit of effort (CUE) for a stratum was calculated by dividing the actual total number of a species caught by the actual total number of rod-hours expended by all anglers in catching these fish (Appendix II). This, the unweighted CUE, was used in this report as a measure of relative abundance and is used to interpret the distribution of catch and effort in the fishery.

RESULTS AND DISCUSSION

From July 1 to August 31, 1985, 243 interviews with angling parties involving 566 angler contacts were conducted. A summary of selected information gathered from angler interviews is contained in Appendix IV.

Distribution of Angling Effort

Anglers expended an estimated 14,800 ±2,847 (95% C.I.) rod-hours in the study area in July and August, 1985 (Table 2). Fifty-three percent of the effort was spent in July and 55% of the effort was spent on the Leamington dock. Anglers on Wheatley and Kingsville docks spent 24% and 21% respectively of the total effort.

An estimated 9,098 rod-hours were expended by weekday anglers and 5,702 rod-hours by weekend day anglers (Table 3). The mean angling effort per area (dock) was 35 rod-hours during a weekday six and one-half hour fishing period and 50 rod-hours during a weekend day six and one-half hour angling period (Table 4).

Morning angling was more popular than afternoon angling on weekdays (32% of total) but afternoon angling was more popular than morning angling on weekends (24% of total)(Table 3).

Catch and Harvest

An estimated 12,542 fish were caught in the study area and 6,212 were harvested (Table 5). Percent contribution by species in numbers to the total catch and harvest were: yellow perch (43% and 73%), freshwater drum (25% and 9%), white bass (21% and 5%), white perch (3% and 5%) and other species, two

percent or less.

Percentage of anglers seeking a particular species (species anglers) was: yellow perch (81%), white bass (8%), freshwater drum (6%), walleye (5%) and other species, two percent or less (Table 6).

Effort by species anglers expressed as a percentage of total effort was: yellow perch anglers (81%), white bass anglers (10%), freshwater drum anglers (6%), walleye anglers (5%) and other species anglers, three percent or less (Table 7).

Yellow Perch Fishery

Effort

Anglers expressing a preference for yellow perch expended 81% of the total effort spent on the three docks (Table 7).

Catch Per Unit of Effort

Yellow perch anglers caught an estimated 0.450 yellow perch per rod-hour of angling in the study area in 1985 (Table 8). The best angling success rate occurred in Area 1 (Wheatley dock) during July (1.035 yellow perch per rod-hour) and the poorest was in Area 3 (Kingsville dock) in July (0.178 yellow perch per rod-hour). The CUE for the study area was relatively the same in July (0.464) as in August (0.428). Over the season, the yellow perch success rate was the best off Wheatley dock (0.883 yellow perch per rod-hour).

Catch and Harvest

An estimated 5,386 ±2,827 (95% C.I.) yellow perch were caught in the study area in 1985 (Table 5). Of these, 4,538 or 73% were harvested. Fifty-two percent of the catch and 59%

of the harvest of yellow perch came from the Wheatley dock. The percent contribution to the total catch and harvest by anglers on the Leamington dock was 36% and 29% respectively and on Kingsville dock, 13% and 12% respectively. More yellow perch were taken in July (71%) than in August (29%)(Table 9). Yellow perch anglers caught more perch through the week than on weekends (Table 10) and only slightly more effort (3%) was expended on an average weekday than on an average weekend day. Catch and harvest were higher on an average weekday than on an average weekend day (25% and 43% respectively) but CUE's were similar (0.457 yellow perch per weekday rod-hour, and 0.441 yellow perch per weekend day rod-hour).

Yellow perch catches were higher in the afternoon period than in the morning period for the study area (Table 11). The yellow perch CUE was higher in the afternoon also.

Age Composition

Three-year-old yellow perch contributed the most numbers (52%) to the 1985 angler yellow perch harvest (Table 12, Figure 2).

Mean length and weight of harvested yellow perch are presented in Table 12. The mean total length of 25 harvested yellow perch (all age-groups) was 174 mm and the mean weight of eight three-year-old yellow perch was 118 g.

Residency Status

Residents of Ontario constituted 86% of anglers interviewed in the study area. (Table 13).

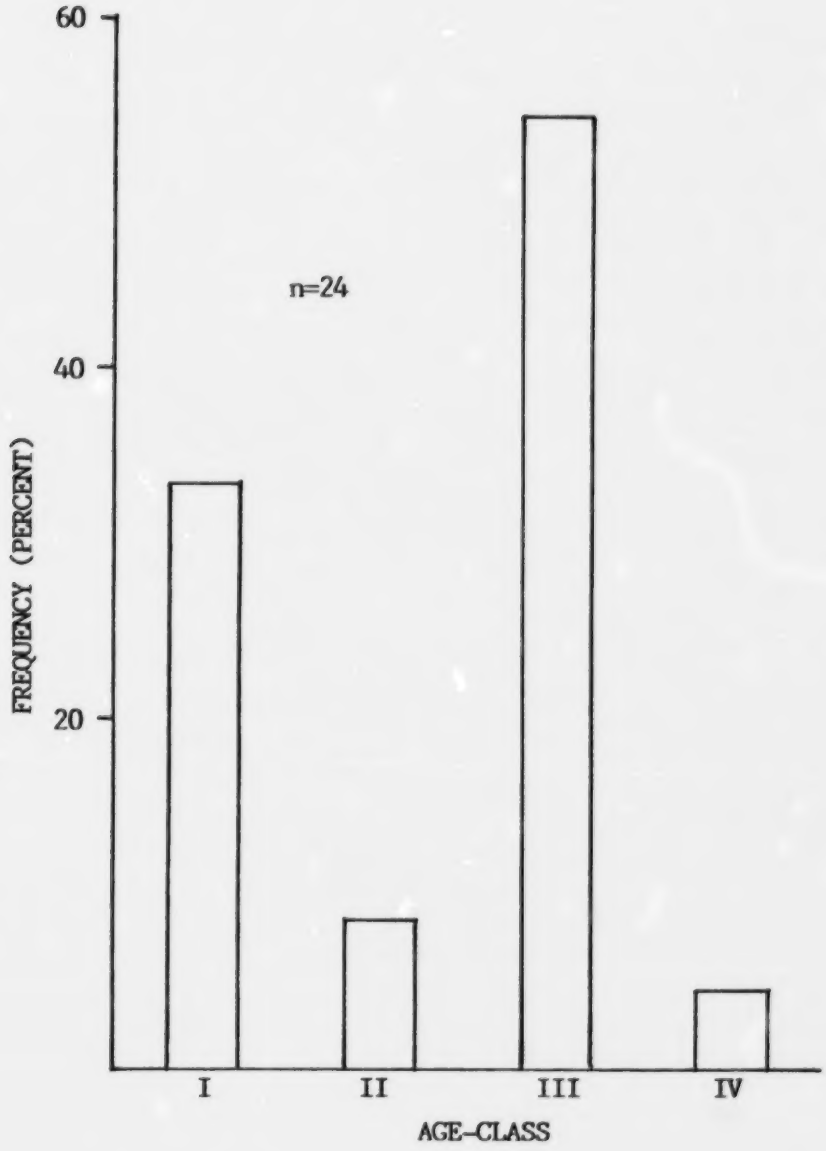

Figure 2. Age frequency histogram for angler harvested yellow perch from the Wheatley, Leamington and Kingsville docks, Lake Erie, 1985.

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Table 1. Creel census schedule for the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.

Date	Dock sampling sequence[a]	Census-period, day-type[b]
July 4	K L W	AD
July 5	W L K	PD
July 6-11	OFF	
July 12	L K W	AD
July 13	K L W	PE
July 14	L W K	AE
July 15	K W L	PD
July 16	W L K	AD
July 17-21	OFF	
July 22	W K L	PD
July 23-26	OFF	
July 27	L K W	AE
July 28	K W L	PE
July 29-30	OFF	
July 31	K W L	AD
August 1-8	OFF	
August 9	W K L	PD
August 10	K L W	PE
August 11	K L W	AE
August 12-14	OFF	
August 15	K L W	AD
August 16	K W L	PD
August 17-18	OFF	
August 19	L W K	AD
August 20-23	OFF	
August 24	K L W	AE
August 25	L K W	PE
August 26	W K L	PD
August 27	L W K	AD
August 28	L W K	PD
August 29-31	OFF	

[a] Sampling sequence: W L K = Wheatley (W) first, Leamington (L) second and Kingsville (K) third.

[b] Census-periods and day-type were classified as follows: A=AM, P=PM, D=weekday and E=weekend day.

Table 2. Distribution of angling effort by month for the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.

Month	Effort	Dock (W)	Dock (L)	Dock (K)	Total	Percent of total
July	R	2,298	3,800	1,701	7,799	53
	A	2,313	3,774	1,678	7,765	
August	R	1,199	4,366	1,436	7,001	47
	A	1,265	4,344	1,458	7,068	
Total	R	3,497	8,165	3,138	14,800	100
	A	3,578	8,118	3,137	14,832	
Percent of total	R	24	55	21	100	

[a] 'R' is the estimated rod-hours.
'A' is the estimated angler-hours.

Table 3. Distribution of angling effort by day-type, census-period and month for the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.[a]

Month	Dock	Day-type: Weekday, Census-period: AM	Weekday, Census-period: PM	Weekend day, Census-period: AM	Weekend day, Census-period: PM
July	(W)	751	1,065	19	463
	(L)	1,788	1,082	443	487
	(K)	489	127	569	517
August	(W)	349	127	312	412
	(L)	986	1,820	565	995
	(K)	379	136	195	726
Study period	Study area	4,741	4,357	2,103	3,599
Percent of total		32	29	14	24
(AM + PM)[b]		9,098		5,702	
Percent of (AM + PM)		61		39	

[a] Effort estimated in rod-hours.

[b] Represents the total effort expended on weekdays or weekend days regardless of census-period.

Table 4. Distribution of mean angling effort by day-type, census-period and month for the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.[a]

Month	Dock	Day-type: Weekday, Census-period: AM	Weekday, Census-period: PM	Weekend day, Census-period: AM	Weekend day, Census-period: PM
July	(W)	34	48	2	51
	(L)	81	49	49	54
	(K)	22	6	63	57
August	(W)	17	6	31	41
	(L)	47	87	57	100
	(K)	18	6	20	73
Study period	(W)	26	28	17	46
	(L)	65	67	53	78
	(K)	20	6	40	65
Study period	Study area	37	34	37	63
Study period, study area and census-period		35[b]		50[b]	
Study period, study area, census-period and day-type		40[c]			

[a] Effort was estimated in rod-hours and was based on a six and one-half hour fishing period.

[b] Represents the mean angling effort expended during a weekday or weekend day six and one-half hour fishing period regardless of census-period, dock or month.

[c] Represents the mean angling effort expended during a six and one-half hour fishing period regardless of census-period, day-type, dock or month.

Table 5. Catch and harvest estimates (in number) of the sport fishery from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.

Species	Dock (W) Catch	Dock (W) Harvest	Dock (L) Catch	Dock (L) Harvest	Dock (K) Catch	Dock (K) Harvest	Total catch	Total harvest	% Total catch	% Total harvest
Yellow perch	2,776	2,664	1,914	1,327	695	546	5,386	4,538	43	73
Freshwater drum	671	102	1,705	172	812	299	3,188	572	25	9
White bass	89	51	2,204	257	281	0	2,574	307	21	5
White perch	5	0	307	275	82	46	394	322	3	5
Walleye	51	22	146	106	11	11	208	139	2	2
Rock bass	19	19	180	55	55	11	253	85	2	1
Channel catfish	46	28	223	29	0	0	268	56	2	1
Yellow bullhead	135	135	0	0	0	0	135	135	1	2
Catfish	0	0	41	0	0	0	41	0	<1	0
Smallmouth bass	7	7	0	0	40	40	47	47	<1	1
Black crappie	29	0	0	0	0	0	29	0	<1	0
White crappie	9	0	0	0	0	0	9	0	<1	0
Bluegill	0	0	0	0	5	5	5	5	<1	<1
Black bullhead	0	0	0	0	5	5	5	5	<1	<1
Total	3,837	3,028	6,720	2,221	1,986	963	12,542	6,212	100	100

Table 6. Percentage of anglers seeking particular species from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.[a]

Month	Dock	Species sought										
		Yellow perch	White bass	Fresh-water drum	Walleye	Rock bass	White perch	Channel catfish	Small-mouth bass	White crappie	Yellow bullhead	Stonecat
July	(W)	88	0	7	0	5	0	5	0	2	0	2
	(L)	91	9	6	4	3	3	1	1	0	0	0
	(K)	100	3	3	3	0	0	0	3	0	0	0
August	(W)	56	8	8	12	0	0	0	4	0	4	0
	(L)	69	17	3	9	3	5	2	0	0	0	0
	(K)	63	5	11	5	0	5	0	0	0	0	0
Study period	Study area	81	8	6	5	2	2	2	1	<1	<1	<1

[a] Angler preference was expressed as a percentage of species anglers over all anglers. In some cases anglers sought more than one species, while in others no preference was indicated.

Table 7. Effort by species anglers expressed as a percentage of total angling effort (rod-hours) from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.[a]

Month	Dock	Species sought										
		Yellow perch	White bass	Fresh-water drum	Walleye	Rock bass	White perch	Channel catfish	Small-mouth bass	White crappie	Yellow bullhead	Stonecat
July	(W)	91	0	11	0	7	0	8	0	5	0	3
	(L)	89	9	6	5	5	4	1	1	0	0	0
	(K)	100	1	1	4	0	0	0	2	0	0	0
August	(W)	50	9	11	9	0	0	0	5	0	6	0
	(L)	74	21	2	9	1	4	1	0	0	0	0
	(K)	64	6	13	3	0	10	0	0	0	0	0
Study period	Study area	81	10	6	5	3	3	2	1	1	<1	1

[a] Some anglers sought more than one species while others indicated no preference.

Table 8. Catch per unit of effort (CUE) for yellow perch caught by month from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.[a]

Month	Dock	Yellow perch anglers	All anglers
July	(W)	1.035	0.938
	(L)	0.273	0.239
	(K)	0.178	0.178
	Study area	0.464	0.425
August	(W)	0.487	0.308
	(L)	0.351	0.265
	(K)	0.674	0.365
	Study area	0.428	0.293
Study period	(W)	0.883	0.713
	(L)	0.312	0.253
	(K)	0.311	0.253
Study period	Study area	0.450	0.364

[a] CUE represents the observed number of fish caught divided by the observed effort in rod-hours both for yellow perch anglers and all anglers.

Table 9. Distribution of the yellow perch catch and harvest by month among the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.

Month	Dock	Estimated catch (number)	Percent of total catch	Estimated harvest (number)	Percent kept
July	(W)	2,532	47	2,526	100
	(L)	1,001	19	764	76
	(K)	306	6	288	94
	Study area	3,839	71	3,578	93
August	(W)	245	5	138	56
	(L)	913	17	563	62
	(K)	389	7	258	66
	Study area	1,547	29	959	62
Study period	(W)	2,776	52	2,664	96
	(L)	1,914	36	1,327	69
	(K)	695	13	546	79
Study period	Study area	5,386	100	4,538	84

Table 10. Distribution of catch and effort statistics for yellow perch anglers by day-type among the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.

Dock	Statistic	Day-type: Weekday	Mean[d]	Weekend day	Mean[d]
(W)	Rod-hours[a]	2,078	48	610	32
	Catch[b]	2,446	57	298	16
	Harvest[b]	2,375	55	274	14
	CUE[c]	1.191		0.532	
(L)	Rod-hours[a]	5,220	121	1,411	74
	Catch[b]	1,252	29	563	30
	Harvest[b]	820	19	431	23
	CUE[c]	0.250		0.478	
(K)	Rod-hours[a]	1,044	24	1,580	83
	Catch[b]	234	5	522	27
	Harvest[b]	234	5	358	19
	CUE[c]	0.256		0.341	
Study area	Rod-hours[a]	8,341	194	3,600	189
	Catch[b]	3,931	91	1,382	73
	Harvest[b]	3,429	80	1,063	56
	CUE[c]	0.457		0.441	

[a] Angling effort exerted by yellow perch anglers only.

[b] Catch and harvest estimates in number of yellow perch.

[c] CUE's for yellow perch caught, derived from observed values.

[d] Mean daily estimate of effort (rod-hours). Catch and harvest (by number) based on a six and one-half hour fishing period.

Table 11. Distribution of catch and effort statistics for yellow perch anglers by census-period among the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.

Dock	Statistic	Census-period AM	Census-period PM
(W)	Rod-hours[a]	983	1,704
	Catch[b]	1,194	1,549
	Harvest[b]	1,123	1,526
	CUE[c]	1.017	0.839
(L)	Rod-hours[a]	3,148	3,483
	Catch[b]	899	916
	Harvest[b]	608	643
	CUE[c]	0.361	0.261
(K)	Rod-hours[a]	1,495	1,129
	Catch[b]	388	367
	Harvest[b]	313	279
	CUE[c]	0.219	0.431
Study area	Rod-hour[a]	5,626	6,316
	Catch[b]	2,481	2,832
	Harvest[b]	2,044	2,448
	CUE[c]	0.404	0.490

[a] Angling effort exerted by yellow perch anglers only.

[b] Catch and harvest estimates in number of yellow perch.

[c] CUE's for yellow perch caught, derived from observed values.

Table 12. Length and weight-at-age of yellow perch harvested by angling from the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.[a]

Dock	Statistic	Age-group I	II	III	IV	All
(W)	n	2				2
	$\bar{L}$	156				156
	s	5.0				5.0
(L)	n	5		6	1	13[b]
	$\bar{L}$	144		180	163	164
	s	4.1		17.1	-	20.9
(K)	n	1	2	7		10
	$\bar{L}$	165	161	203		191
	s	-	1.4	13.3		22.5
Study area	n	8	2	13	1	25[c]
	$\bar{L}$	149	161	193	163	174
	s	9.1	1.4	18.8	-	24.7
	n			8		8
	$\bar{W}$			118		118
	s			21.9		21.9

[a] Mean total length ($\bar{L}$) and mean weight ($\bar{W}$) are in mm and g respectively. The pooled (n=8) length/weight regression equation is:

$$\text{Log } W(g) = -2.8451 + 2.1261 \log L(mm), \; r=0.73$$

[b] Mean total length and standard deviation were calculated for 13 fish, one of which was not aged.

[c] Mean total length and standard deviation were calculated for 25 fish, one of which was not aged.

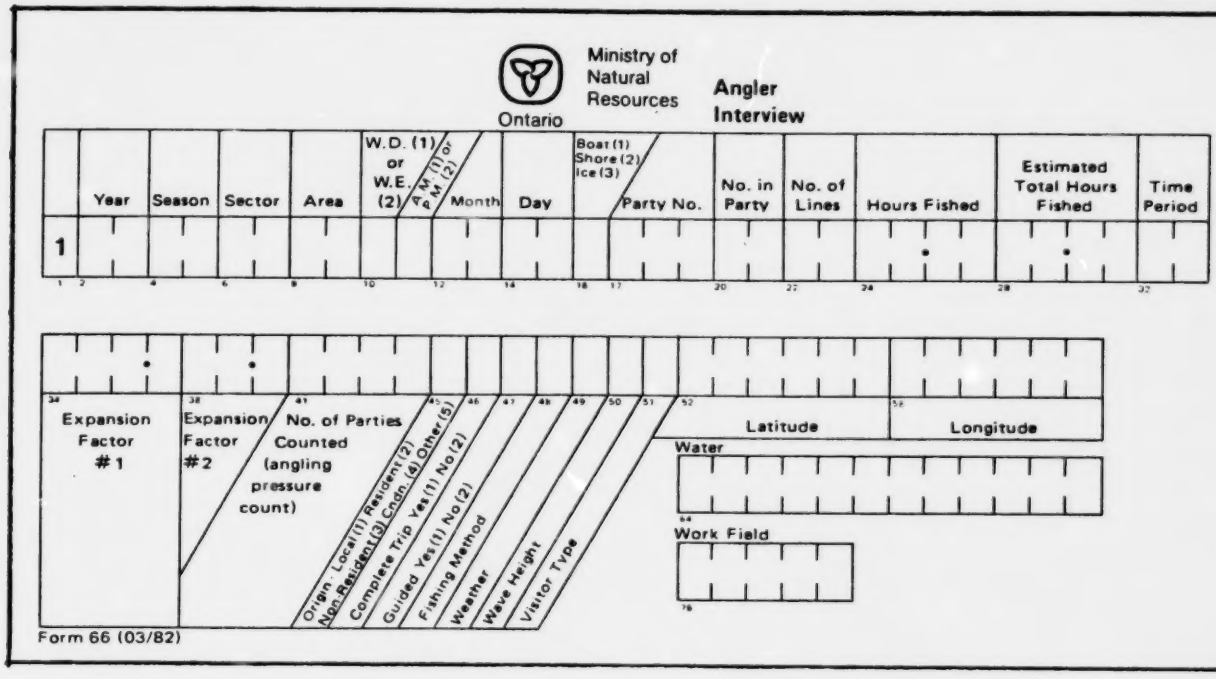
Table 13. Residency status of anglers interviewed on the Wheatley (W), Leamington (L) and Kingsville (K) docks, Lake Erie, 1985.[a]

Month	Dock	Residency status	Number of interviews	Percent of total
July	(W)	NR	17	
		R	77	
	(L)	NR	17	
		R	123	
	(K)	NR	3	
		R	65	
	Study area	NR	37	7
		R	265	48
August	(W)	NR	10	
		R	46	
	(L)	NR	18	
		R	128	
	(K)	NR	10	
		R	38	
	Study area	NR	38	7
		R	212	38
Study period	(W)	NR	27	18
		R	123	82
	(L)	NR	35	12
		R	251	88
	(K)	NR	13	11
		R	103	89
Study period	Study area	NR	75	14
		R	477	86

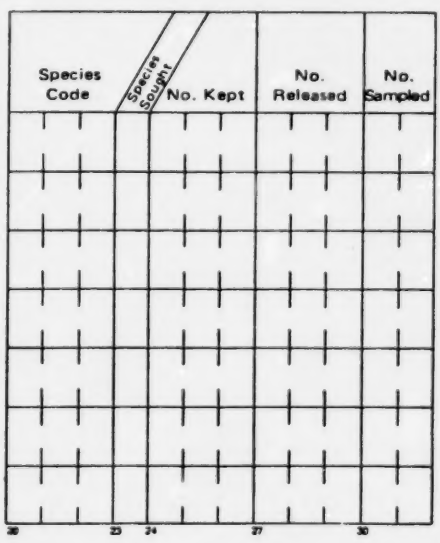
[a] "Resident" (R) applied to anglers living in Ontario, while "Non-Resident" (NR) applied to all other anglers. Historically, most non-residents were citizens of the United States.

Appendix I: Field forms.

1. Angler interview form.



Reverse side.



Comments:

2 (Cols. 2-19 as on Reverse)

Investigator:

Fishing Method – Troll (1), Still (2), Drift (3), Other (4)

Weather – Clear (1), Partly Overcast (2), Overcast (3), Fog (4), Rain (5), Thunder (6)

Wave Height – <0.33m (1), 0.33 - 0.66m (2), 0.66 - 1.00m (3), 1.00 - 1.33m (4), >1.33 (5)

Visitor Type – Camp. - comm. (1), Camp. - prov. (2), Cottage - priv. (3), Paid - accommodation (4), Day - tripper (5)

2. Boat count form.

INSTANTANEOUS COUNT

Sector ☐ Count No. ☐ Day ☐☐ Month ☐☐ Year ☐☐

Area	No. of (Parties) (Individuals)* Counted			Count Time	
	Sailing	Pleasure	Fishing	Start (hrs.)	End (hrs.)
1					
2					
3					
4					
5					

If part of area not counted give reason:

* Cross out unit **not** used.

L.E.F.A.U. (05/85)

3. Weather and water report form.

WEATHER AND WATER REPORT

		AREA				
		1	2	3	4	5
	LAT.					
	LONG.					
TIME: AM PM	EXACT					
TEMPERATURE:	AIR					
(°C)	WATER					
WATER SURFACE						
WAVE HEIGHT (m)						
CLOUD COVER (%)						
WIND: DIRECTION						
STRENGTH	(Knots)					

COMMENTS:

Appendix II: Computational methods (Petzold 1980).

The total estimated harvest (caught minus released) of a species in a stratum (T_h) was calculated as follows:

$$T_h = \frac{D_h}{d_h} \sum_{i}^{d_h} \hat{r}_{hi} \; N_{hi} \; \hat{\bar{x}}_{hi} \; \hat{\bar{y}}_{hi}$$

where

D_h = the number of days in stratum h

d_h = the number of days sampled in stratum h

$\hat{r}_{hi}$ = the sample catch per unit of effort on the i'th day for all anglers interviewed

$\hat{\bar{x}}_{hi}$ = the sample mean number of parties per instantaneous party count on the i'th day (in this case a party consists of one angler with one line in the water)

$\hat{\bar{y}}_{hi}$ = the sample mean number of rods per party on the i'th day (in this case a party consists of one angler and one line)

$\hat{\bar{z}}_{hi}$ = the sample mean number of anglers per party on the i'th day (in this case this term equals one when used to calculate A_h)

N_{hi} = the number of fishing hours designated in a fishing day

The sample catch per unit of effort ($\hat{r}_{hi}$), the sample mean number of parties per party count ($\hat{\bar{x}}_{hi}$) and the sample mean number of rods per angler ($\hat{\bar{y}}_{hi}$) were calculated as follows:

$$\hat{r}_{hi} = \frac{\sum_{j}^{n_{hi}} c_{hij}}{\sum_{j}^{n_{hi}} e_{hij}}$$

$$\hat{\bar{x}}_{hi} = \frac{\sum_{j}^{m_{hi}} x_{hij}}{m_{hi}}$$

$$\hat{\bar{y}}_{hi} = \frac{\sum_{j}^{n_{hi}} y_{hij}}{n_{hi}}$$

where

c_{hij} = the number of fish kept by the j'th sampled party on the i'th day

e_{hij} = the number of rod-hours fished by the j'th sampled party on the i'th day

n_{hi} = the number of parties interviewed on the i'th day

x_{hij} = the number of parties counted on the j'th party count (in this case a party consists of one angler with one line in the water)

m_{hi} = the number of party counts on the i'th day (in this case a party consists of one angler with one line in the water)

y_{hij} = the number of rods in the j'th party (in this case a

party consists of one angler with one line in the water)

The estimated total catch of a species, T_c (i.e., those kept plus those released) was estimated in the same manner as for harvest except $\hat{\bar{r}}_{hi}$ was calculated using all fish caught.

The total rod-hours in a stratum (E_h) and angler-hours (A_h) in a stratum (h) were calculated as:

$$E_h = \frac{D_h}{d_h} \sum_{i}^{d_h} N_{hi} \hat{\bar{x}}_{hi} \hat{\bar{y}}_{hi}$$

$$A_h = \frac{D_h}{d_h} \sum_{i}^{d_h} N_{hi} \hat{\bar{x}}_{hi} \hat{\bar{z}}_{hi}$$

Appendix III: Common and scientific names of fish species reported during the Wheatley, Leamington and Kingsville docks creel census, Lake Erie, 1985.

Common name	Scientific name[a]
Rock bass	Ambloplites rupestris (Rafinesque)
Smallmouth bass	Micropterus dolomieui Lacépède
White bass	Morone chrysops (Rafinesque)
Bluegill	Lepomis machrochirus Rafinesque
Black bullhead	Ictalurus melas (Rafinesque)
Yellow bullhead	Ictalurus natalis (Lesueur)
Catfish	Ictaluridae species
Channel catfish	Ictalurus punctatus (Rafinesque)
Black crappie	Pomoxis nigromaculatus (Lesueur)
White crappie	Pomoxis annularis Rafinesque
Freshwater drum	Aplodinotus grunniens Rafinesque
White perch	Morone americana (Gmelin)
Yellow perch	Perca flavescens (Mitchill)
Stonecat	Noturus flavus Rafinesque
Walleye	Stizostedion vitreum vitreum (Mitchill)

[a] After Robins et al. 1980.

Appendix IV: Monthly summaries of effort, catch per unit of effort (CUE), catch and harvest.

Explanatory Notes:

1. Areas 1, 2 and 3 represent the Wheatley, Leamington and Kingsville docks respectively.

2. Computer codes denoting season are 7 for July and 8 for August.

3. Computer codes denoting day-type are 1 for weekday and 2 for weekend days.

4. Computer codes denoting time-period are 1 for AM (0730-1400 h) and 2 for PM (1400-2030 h).

5. Multiple numerical codes indicate pooling of strata.

6. A 'Dummy' encountered in the species variable list is an integral part of the computer program used to indicate that either (1) a party was interviewed that was not seeking any species in particular and had not caught any fish or that (2) an angler count had been undertaken with zero anglers observed.

7. SE denotes standard error of estimate.
   Note: A minimum of two sampling days is required to calculate a standard error of estimate for any given stratum. This condition was met by all strata and reported SE's are valid.

SUMMARY FOR:

SEASON	1 7 8
AREA	1 2 3
DAY-TYPE	1 2
TIME-PERIOD	1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI-DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
66	243	2.33	2.32	909	910	148321	1400)	148001	1411)	477	75	194	6.42

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)
CUMMY	999	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
SHEEPHE	371	214	39	0.235	0.043	0.215	0.039	3188(	535)	572(	163)
WALLEYE	334	20	13	0.022	0.014	0.014	0.009	208(	139)	139(	98)
Y. PERC	331	331	276	0.364	0.303	0.364	0.307	5386(	1401)	4538(	1365)
B. CRAP	319	1	0	0.001	0.000	0.002	0.000	29(	26)	0(	0)
W. CRAP	318	1	0	0.001	0.000	0.001	0.000	9(	8)	0(	0)
S. BASS	316	2	2	0.002	0.002	0.003	0.003	47(	37)	47(	37)
BLUEGIL	314	1	1	0.001	0.001	0.000	0.000	5(	5)	5(	5)
R. BASS	311	17	8	0.019	0.009	0.017	0.006	253(	106)	85(	32)
W. BASS	302	155	21	0.170	0.023	0.174	0.021	2574(	1238)	307(	77)
W. PERC	301	36	32	0.040	0.035	0.027	0.022	394(	188)	322(	180)
STONCAT	235	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
C. CATF	234	17	6	0.019	0.007	0.018	0.004	268(	91)	56(	32)
Y. BULL	232	8	8	0.009	0.009	0.009	0.009	135(	121)	135(	121)
BK. BUL	231	1	1	0.001	0.001	0.000	0.000	5(	5)	5(	5)
CATFISH	230	3	0	0.003	0.000	0.003	0.000	41(	26)	0(	0)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS	(SE)
SHEEPHE	371	27	17	0.352	0.221	0.472	0.286	438(	171)	265(	102)	14	77	927	249
WALLEYE	334	20	13	0.313	0.203	0.322	0.196	256(	161)	156(	103)	13	64	795	276
Y. PERC	331	328	275	0.450	0.377	0.445	0.376	5313(	1376)	4492(	1342)	196	729	11942	1245
W. CRAP	318	1	0	0.040	0.000	0.040	0.000	4(	4)	0(	0)	1	25	105	92
S. BASS	316	2	2	0.091	0.091	0.284	0.284	43(	36)	43(	36)	3	22	152	81
R. BASS	311	6	6	0.112	0.112	0.120	0.120	51(	21)	51(	21)	6	54	422	170
W. BASS	302	34	21	0.320	0.198	0.278	0.170	415(	82)	254(	60)	20	106	1493	331
W. PERC	301	32	30	0.874	0.820	1.118	1.028	515(	341)	473(	337)	6	37	460	201
STONCAT	235	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)	1	3	77	72
C. CATF	234	6	6	0.148	0.148	0.119	0.119	30(	16)	30(	16)	4	41	249	125
Y. BULL	232	8	8	0.889	0.889	0.889	0.889	62(	55)	62(	55)	1	9	69	62

SUMMARY FOR:

SEASON 7
AREA 1
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI-DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
11	41	2.29	2.24	142	141	2313(	622)	2298(	625)	77	17	31	5.84

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBSERVED OBS. CATCH	OBSERVED OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
SHEEPHE	371	11	2	0.078	0.014	0.100	0.021	230(	119)	49(	26)
Y. PERC	331	132	131	0.938	0.931	1.102	1.099	2532(	1313)	2526(	1313)
W. CRAP	318	1	0	0.007	0.000	0.004	0.000	9(	8)	0(	0)
R. BASS	311	2	2	0.014	0.014	0.008	0.008	19(	16)	19(	16)
W. PERC	301	1	0	0.007	0.000	0.002	0.000	5(	5)	0(	0)
STONCAT	235	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
C. CATF	234	3	3	0.021	0.021	0.012	0.012	28(	25)	28(	25)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBSERVED OBS. CATCH	OBSERVED OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS	(SE)
SHEEPHE	371	2	1	0.065	0.032	0.116	0.099	307(	241)	261(	241)	3	31	260	171
Y. PERC	331	132	131	1.035	1.027	1.235	1.232	2578(	1299)	2573(	1300)	36	128	2088	657
W. CRAP	318	1	0	0.040	0.000	0.040	0.000	4(	4)	0(	0)	1	25	105	92
R. BASS	311	2	2	0.078	0.078	0.054	0.054	8(	7)	8(	7)	2	26	156	104
STONCAT	235	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)	1	3	77	72
C. CATF	234	3	3	0.107	0.107	0.069	0.069	13(	11)	13(	11)	2	28	182	117

SUMMARY FOR:

SEASON 7
AREA 2
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI-DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
11	69	2.03	2.06	216	217	3774(	819)	3800(	838)	123	17	33	9.36

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/RD-HR	OBSERVED KEPT/RD-HR	WEIGHTED CATCH/RD-HR	WEIGHTED KEPT/RD-HR	ESTIM. CATCH (SE)	ESTIM. HARVEST (SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(0)	0(0)
SHEEPHE	371	57	10	0.262	0.046	0.263	0.039	100(334)	148(49)
WALLEYE	334	0	0	0.000	0.000	0.000	0.000	0(0)	0(0)
Y. PERC	331	52	39	0.239	0.179	0.263	0.201	100(284)	764(220)
S. BASS	316	0	0	0.000	0.000	0.000	0.000	0(0)	0(0)
R. BASS	311	3	2	0.014	0.009	0.014	0.010	55(26)	39(25)
W. BASS	302	77	7	0.354	0.032	0.398	0.027	151(1195)	102(43)
W. PERC	301	4	4	0.018	0.018	0.020	0.020	76(59)	76(59)
C. CATF	234	8	2	0.037	0.009	0.038	0.005	143(79)	20(18)
CATFISH	230	3	0	0.014	0.000	0.011	0.000	41(26)	0(0)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/RD-HR	OBSERVED KEPT/RD-HR	WEIGHTED CATCH/RD-HR	WEIGHTED KEPT/RD-HR	ESTIM. CATCH (SE)	ESTIM. HARVEST (SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS (SE)
SHEEPHE	371	6	6	0.511	0.511	0.257	0.257	56(30)	56(30)	4	12	219 86
WALLEYE	334	0	0	0.000	0.000	0.000	0.000	0(0)	0(0)	3	5	188 170
Y. PERC	331	51	39	0.273	0.209	0.284	0.221	964(269)	749(211)	63	187	3392 725
S. BASS	316	0	0	0.000	0.000	0.000	0.000	0(0)	0(0)	1	3	48 43
R. BASS	311	2	2	0.111	0.111	0.129	0.129	26(18)	26(18)	2	18	204 133
W. BASS	302	9	7	0.223	0.173	0.207	0.159	73(28)	56(22)	6	40	350 142
W. PERC	301	4	4	0.241	0.241	0.399	0.399	60(51)	60(51)	2	17	150 107
C. CATF	234	2	2	0.444	0.444	0.444	0.444	12(11)	12(11)	1	5	27 25

SUMMARY FOR:

SEASON 4
AREA 3
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	SID. ERROR	ESTIM. ROD HOURS	SID. ERROR	NO. RESI- DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
11	31	2.29	2.32	127	129	1678(	316)	1701(	331)	65	3	33	4.79

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBSERVED OBS. CATCH	OBS. KEPT	CATCH/ RD-HR	KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
SHEEPHE	371	32	14	0.248	0.108	0.278	0.121	472(	153)	206(	133)
WALLEYE	334	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
Y. PERC	331	23	21	0.178	0.162	0.180	0.169	306(	78)	288(	80)
S. BASS	316	1	1	0.008	0.008	0.023	0.023	40(	36)	40(	36)
W. BASS	302	7	0	0.054	0.000	0.133	0.000	227(	193)	0(	0)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBSERVED OBS. CATCH	OBS. KEPT	CATCH/ RD-HR	KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS	(SE)
SHEEPHE	371	2	2	4.000	4.000	4.000	4.000	79(	72)	79(	72)	1	1	20	18
WALLEYE	334	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)	1	1	72	65
Y. PERC	331	23	21	0.178	0.162	0.180	0.169	306(	78)	288(	80)	31	129	1701	331
S. BASS	316	1	1	1.000	1.000	1.000	1.000	40(	36)	40(	36)	1	1	40	36
W. BASS	302	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)	1	0	19	17

SUMMARY FOR:

SEASON	8
AREA	1
DAY-TYPE	1 2
TIME-PERIOD	1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI-DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
11	25	2.36	2.24	80	78	1265(	357)	1199(	310)	46	10	33	3.24

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
SHEEPHE	371	28	4	0.359	0.051	0.367	0.044	440(	207)	53(	35)
WALLEYE	334	7	3	0.090	0.038	0.042	0.018	51(	46)	22(	20)
Y. PERC	331	24	15	0.308	0.192	0.204	0.115	245(	92)	138(	33)
B. CRAP	319	1	0	0.013	0.000	0.024	0.000	29(	26)	0(	0)
S. BASS	316	1	1	0.013	0.013	0.006	0.006	7(	7)	7(	7)
W. BASS	302	7	3	0.090	0.038	0.075	0.042	89(	41)	51(	45)
C. CATF	234	1	0	0.013	0.000	0.015	0.000	18(	16)	0(	0)
Y. BULL	232	8	8	0.103	0.103	0.113	0.113	135(	121)	135(	121)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS	(SE)
SHEEPHE	371	7	2	0.424	0.121	0.437	0.113	391(	251)	151(	141)	2	17	134	4
WALLEYE	334	7	3	0.966	0.414	0.966	0.414	105(	94)	45(	40)	3	7	108	97
Y. PERC	331	24	15	0.487	0.305	0.276	0.129	166(	70)	77(	9)	14	49	599	163
S. BASS	316	1	1	0.056	0.056	0.056	0.056	4(	3)	4(	3)	1	18	65	58
W. BASS	302	4	3	0.432	0.324	0.432	0.324	45(	40)	34(	30)	2	9	104	93
Y. BULL	232	8	8	0.889	0.889	0.889	0.889	62(	55)	62(	55)	1	9	69	62

SUMMARY FOR:

SEASON 8
AREA 2
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	STD. ERROR	ESTIM. ROD HOURS	STD. ERROR	NO. RESI- DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
11	50	2.66	2.67	254	257	4344(	672)	4366(	673)	128	18	33	11.12

CATCH SUMMARY(ALL FISHERMEN)

		OBSERVED		WEIGHTED						
SPECIES	CODE	OBS. CATCH	OBS. KEPT	CATCH/ RD-HR	KEPT/ RD-HR	CATCH/ RD-HR	KEPT/ RD-HR	ESTIM. CATCH (SE)		ESTIM. HARVEST (SE)	
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
SHEEPHE	371	57	3	0.222	0.012	0.161	0.005	704(	254)	23(	21)
WALLEYE	334	11	8	0.043	0.031	0.034	0.024	146(	131)	106(	95)
Y. PERC	331	68	48	0.265	0.187	0.209	0.129	913(	362)	563(	272)
R. BASS	311	8	2	0.031	0.008	0.029	0.004	125(	97)	16(	1)
W. BASS	302	57	11	0.222	0.043	0.159	0.036	693(	259)	155(	46)
W. PERC	301	27	25	0.105	0.097	0.053	0.046	230(	166)	199(	167)
C. CATF	234	5	1	0.019	0.004	0.018	0.002	79(	34)	8(	7)

CATCH SUMMARY(SPECIES FISHERMEN)

		OBSERVED		WEIGHTED											
SPECIES	CODE	OBS. CATCH	OBS. KEPT	CATCH/ RD-HR	KEPT/ RD-HR	CATCH/ RD-HR	KEPT/ RD-HR	ESTIM. CATCH (SE)		ESTIM. HARVEST (SE)		NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS (SE)	
SHEEPHE	371	4	3	0.444	0.333	0.368	0.104	38(	27)	11(	10)	2	9	105	79
WALLEYE	334	11	8	0.331	0.241	0.381	0.277	146(	131)	106(	95)	5	33	384	180
Y. PERC	331	66	47	0.351	0.250	0.262	0.155	850(	337)	502(	236)	40	188	3239	590
R. BASS	311	2	2	0.200	0.200	0.257	0.257	16(	5)	16(	5)	2	10	61	16
W. BASS	302	21	11	0.384	0.201	0.319	0.177	298(	66)	165(	47)	10	55	932	272
W. PERC	301	26	25	1.677	1.613	2.378	2.323	390(	333)	381(	332)	3	16	164	109
C. CATF	234	1	1	0.125	0.125	0.125	0.125	5(	4)	5(	4)	1	8	40	36

SUMMARY FOR:

SEASON 8
AREA 3
DAY-TYPE 1 2
TIME-PERIOD 1 2

NUMBER SAMPLING PERIODS	NUMBER PARTIES INTERV.	MEAN ANG/ PARTY	MEAN RODS/ PARTY	OBSERVED ANGLER HOURS	OBSERVED ROD HOURS	ESTIM. ANGLER HOURS	SID. ERROR	ESTIM. ROD HOURS	SID. ERROR	NO. RESI-DENTS	NO. NON RES.	NUMBER PARTY COUNTS	MEAN PARTIES/ COUNT
11	19	2.53	2.47	90	88	14581	4741	14361	4841	38	10	31	4.00

CATCH SUMMARY(ALL FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)
DUMMY	999	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)
SHEEPHE	371	29	6	0.330	0.068	0.237	0.064	340(	172)	93(	66)
WALLEYE	334	2	2	0.023	0.023	0.008	0.008	11(	10)	11(	10)
Y. PERC	331	32	22	0.365	0.251	0.271	0.180	389(	108)	258(	88)
BLUEGIL	314	1	1	0.011	0.011	0.004	0.004	5(	5)	5(	5)
R. BASS	311	4	2	0.046	0.023	0.038	0.008	55(	29)	11(	10)
W. BASS	302	7	0	0.080	0.000	0.038	0.000	54(	9)	0(	0)
W. PERC	301	4	3	0.046	0.034	0.057	0.032	82(	64)	46(	33)
BK. BUL	231	1	1	0.011	0.011	0.004	0.004	5(	5)	5(	5)

CATCH SUMMARY(SPECIES FISHERMEN)

SPECIES	CODE	OBS. CATCH	OBS. KEPT	OBSERVED CATCH/ RD-HR	OBSERVED KEPT/ RD-HR	WEIGHTED CATCH/ RD-HR	WEIGHTED KEPT/ RD-HR	ESTIM. CATCH	(SE)	ESTIM. HARVEST	(SE)	NUMBER PARTIES	OBS. ROD-HRS	ESTIM. ROD-HRS	(SE)
SHEEPHE	371	6	3	0.750	0.375	0.922	0.408	175(	146)	77(	59)	2	8	190	136
WALLEYE	334	2	2	0.111	0.111	0.111	0.111	5(	4)	5(	4)	1	18	43	39
Y. PERC	331	32	22	0.674	0.463	0.487	0.329	449(	95)	304(	78)	12	48	923	329
W. BASS	302	0	0	0.000	0.000	0.000	0.000	0(	0)	0(	0)	1	2	87	81
W. PERC	301	2	1	0.444	0.222	0.444	0.222	65(	58)	32(	29)	1	5	146	131